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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,610	10/24/2003	Yuji Yoshikawa	M1071.1866/P1866	7199

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EXAMINER

MAYES, MELVIN C

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 08/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/691,610

Applicant(s)

YOSHIKAWA ET AL.

Examiner

Melvin Curtis Mayes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 14-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

(1)

Applicant's election with traverse of Claims 1-13 in the reply filed on May 17, 2005 is acknowledged. The traversal is on the ground(s) that the Group II products are made by the process of Group I; Group I is directed to making the carbonate powder of Group III; and Group IV product are dependent on the process of Group I.

This is not found persuasive because product-by-process claims (Group II and IV) are still product claims and can be restricted from the process if the product can be made by another materially different process such as by making the dielectric powder by sol-gel process. Group I is not directed to making carbonate powder but to making dielectric ceramic powder and the carbonate powder of Group III can be used in a coating composition instead of for mixing and calcining to make ceramic powder

The requirement is still deemed proper and is therefore made FINAL.

(2)

This application contains claims 14-20 drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

***Claim Rejections - 35 USC § 112***

(3)

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

(4)

Claims 3-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3 and 4 claims "the **organic** carbonate powder." While the polymer is organic, barium carbonate is not. The term "organic" should be deleted.

***Claim Rejections - 35 USC § 103***

(5)

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(6)

Claims 1-5, 9 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. 5,014,158 in view of Barrett 3,615,811 or in view of Barrett and Nakamura et al. 2001/0002606 for the reasons as set forth in the First Office Action.

Nishimura et al. disclose a method of making a laminated ceramic capacitor comprising: mixing BaCO<sub>3</sub> (barium carbonate) and TiO<sub>2</sub> in water; drying; and calcining to form BaTiO<sub>3</sub>; mixing BaCO<sub>3</sub> and ZrO<sub>2</sub> in the same manner and calcining to form BaZrO<sub>3</sub>; mixing the

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components with binder and solvent to form a slurry; forming a laminate of green sheets and inner electrodes; and firing (col. 6, line 40 – col. 8, line 21). Nishimura et al do not disclose mixing  $\text{BaCO}_3$  having an organic polymer adsorbed thereon with the  $\text{TiO}_2$ .

Barrett teaches that barium carbonate powder particularly adapted for use in ceramic industries and for use in aqueous suspensions, in which cases they are provided with ready dispersability and high reactivity is provided by mixing barium carbonate particles with a minor amount of water, a dispersant not exceeding 2 percent and suitable binder in amount of 1-5 percent based on the dry weight of the barium carbonate and spray drying to form generally spherical particles which are highly reactive, readily dispersed and very low dusting and very free flowing. Useful dispersants include anionic surfactants such as carboxylates and useful binders are those which can be dried to a film and include polyvinyl alcohol and polyvinyl pyrrolidone (Abstract, col. 3, lines 1-10, col. 4, lines 1-72).

Nakamura et al. teach that anionic dispersants which are used to make ceramic slurry include polycarboxylic acid-type dispersants [0051].

It would have been obvious to one of ordinary skill in the art to modified the method of Nishimura et al. for making a laminated ceramic capacitor by providing the barium carbonate for mixing with  $\text{TiO}_2$  in water as barium carbonate powder formed by spray drying a mixture of barium carbonate particles, water, dispersant and binder, as taught by Barrett, to form barium carbonate powder which is highly reactive, readily dispersed and very low dusting and very free flowing and particularly useful in ceramic industries and for use in aqueous suspensions. By providing the binder in the mixture to be spray dried as either polyvinyl alcohol or polyvinyl pyrrolidone, as taught by Barrett, and/or by providing the anionic dispersant in the mixture as a

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carboxylate, such as polycarboxylic acid-type as taught by Nakamura et al., and spray drying, barium carbonate powder having an organic polymer compound adsorbed thereon is obviously produced for subsequently mixing with  $\text{TiO}_2$ , the organic polymer having a molecular weight in the range of 1000 to 100,000, as claimed. By providing the dispersant in amount not exceeding 2 percent and/or providing the binder in amount of 1-5 percent based on the barium carbonate, organic polymer compound is obviously absorbed in amount within or encompassing the range of 0.1-5% by weight, as claimed in Claim 11.

(7)

Claims 6-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. 5,014,158 in view of Barrett 3,615,811 or in view of Barrett and Nakamura et al. 2001/0002606 as applied to claims 1 and 4 above, and further in view of DE 199 64 060 Abstract for the reasons as set forth in the First Office Action.

DE '060 Abstract teaches that in using barium carbonate for thermal solid-state reactions to produce ceramic materials containing oxides, the barium carbonate particles have a specific surface area of not less than  $32 \text{ m}^2/\text{g}$  for higher reactivity.

It would have been obvious to one of ordinary skill in the art to have modified the method of the references as combined by providing the barium carbonate with specific surface area not less than  $32 \text{ m}^2/\text{g}$ , thus more than  $10 \text{ m}^2/\text{g}$ , as taught by DE '060, for higher reactivity.

***Double Patenting***

(8)

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

(9)

Claims 1-11 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/173665 in view of Barrett and Nakamura et al. 2001/0002606.

Copending Application No. 10/173665 discloses a method of manufacturing a barium titanate powder comprising: mixing a barium carbonate powder and a titanium oxide powder to form a powder mixture; and calcining the mixture, wherein the barium carbonate powder has a specific surface area of at least about 20 m<sup>2</sup>/g. Copending Application No. 10/173665 does not

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claim providing a mixture of barium carbonate having an organic polymer adsorbed thereon and titanium oxide.

Barrett teaches that barium carbonate powder particularly adapted for use in ceramic industries and for use in aqueous suspensions, in which cases they are provided with ready dispersability and high reactivity is provided by mixing barium carbonate particles with a minor amount of water, a dispersant not exceeding 2 percent and suitable binder in amount of 1-5 percent based on the dry weight of the barium carbonate and spray drying to form generally spherical particles which are highly reactive, readily dispersed and very low dusting and very free flowing. Useful dispersants include anionic surfactants such as carboxylates and useful binders are those which can be dried to a film and include polyvinyl alcohol and polyvinyl pyrrolidone (Abstract, col. 3, lines 1-10, col. 4, lines 1-72).

Nakamura et al. teach that anionic dispersants which are used to make ceramic slurry include polycarboxylic acid-type dispersants [0051].

It would have been obvious to one of ordinary skill in the art to modified the method of copending Application No. 10/173665 for manufacturing a barium titanate powder by providing the barium carbonate for mixing with  $\text{TiO}_2$  as barium carbonate powder formed by spray drying a mixture of barium carbonate particles, water, dispersant and binder, as taught by Barrett, to form barium carbonate powder which is highly reactive, readily dispersed and very low dusting and very free flowing and particularly useful in ceramic industries and for use in aqueous suspensions. By providing the binder in the mixture to be spray dried as either polyvinyl alcohol or polyvinyl pyrrolidone, as taught by Barrett, and/or by providing the anionic dispersant in the mixture as a carboxylate, such as polycarboxylic acid-type as taught by Nakamura et al., and



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spray drying, barium carbonate powder having an organic polymer compound adsorbed thereon is obviously produced for subsequently mixing with  $\text{TiO}_2$ , the organic polymer having a molecular weight in the range of 1000 to 100,000, as claimed. By providing the dispersant in amount not exceeding 2 percent and/or providing the binder in amount of 1-5 percent based on the barium carbonate, organic polymer compound is obviously absorbed in amount within or encompassing the range of 0.1-5% by weight, as claimed in Claim 11.

This is a provisional obviousness-type double patenting rejection.

Copending Application No. 10/173665 has not yet been abandoned.

### ***Response to Arguments***

(10)

Applicant's arguments filed May 17, 2005 have been fully considered but they are not persuasive. Applicant argues that Barrett does not teach mixing the barium carbonate powder with titanium dioxide powder to form barium titanate and argues that no reasons is advanced to select the barium carbonate of Barrett in the method of the references.

(11)

The motivation for using the teachings of Barrett in the method of Nishimura et al. 5,014,158 is that Barrett teaches that barium carbonate of ready dispersability and high reactivity for use in ceramic industries and in aqueous suspensions is provided by mixing barium carbonate particles with a minor amount of water, a dispersant not exceeding 2 percent and suitable binder in amount of 1-5 percent based on the dry weight of the barium carbonate and spray drying to form generally spherical particles. The Examiner's position is that the teaching of Barrett would

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have suggested to one of ordinary skill in the art to use such a highly reactive and readily dispersable barium carbonate for mixing with titanium oxide for reacting to form barium titanate. The Examiner's position is reinforced by Lester 3,322,683 cited of interest which teaches that highly reactive barium carbonate made by mixing with dispersant may be used in application where the barium carbonate is a major reactive ingredient, such as with titanium oxide for making barium titanate (col. 6, lines 60-65).

***Conclusion***

(12)

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lester teaches making mixing barium carbonate with dispersant to make reactive powder for making barium titanate.

(13)

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


(14)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Curtis Mayes whose telephone number is 571-272-1234.

The examiner can normally be reached on Mon-Fri 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Melvin Curtis Mayes  
Primary Examiner  
Art Unit 1734

MCM  
August 24, 2005